1   What is claimed is:

2

3   (9) CLAIMS

4

5   1.   A model for compiling a specification of a process definition comprising:

6   service nodes, wherein each of said service nodes is a representation of a

7   consumer service; and

8   a first flow diagram sequencing said service nodes as a representation of the

9   process definition.

10

11   2.   The model as set forth in claim 1 further comprising:

12   method nodes, wherein each of said method nodes is a representation of

13   executable operations inherent to a consumer service represented by one of said service

14   nodes.

15

16   3.   The model as set forth in claim 2 further comprising:

17   wherein each of said service nodes is expandable into a second flow diagram of

18   method nodes.

19

20   4.   The model as set forth in claim 1 wherein each of said service nodes is executed by

21   accessing an electronic service registered on an electronic service platform.

22

1   5.   The model as set forth in claim 1 wherein each of said service nodes comprises:

2   consumer service-level properties.

3

4   6.   The model as set forth in claim 5 wherein said consumer service-level properties

5   comprises:

6   a service search recipe or service selection rule.

7

8   7.   The model as set forth in claim 5 wherein said consumer service-level properties

9   comprises:

10   a service reuse.

11

12   8.   The model as set forth in claim 5 wherein said consumer service-level properties

13   comprises:

14   a service-inherent method flow.

15

16   9.   The model as set forth in claim 1 wherein each of said service nodes comprises:

17   consumer authentication properties.

18

19   10.   The model as set forth in claim 1 wherein each of said service nodes comprises:

20   consumer and service certification properties.

21

22

1   11.   The model as set forth in claim 1 wherein each of said service nodes comprises:

2   service-level exception handling rules.

3

4   12.   The model as set forth in claim 1 wherein each of said service nodes comprises:

5   the definition of interaction flow, defining how the interaction with the service is

6   conducted.

7

8   13.   The model as set forth in claim 2 wherein each of said method nodes comprises:

9   representations of operations executed within the context of an electronic service

10   registered with a electronic services platform.

11

12   14.   The model as set forth in claim 13 each of said method nodes further comprises:

13   the service operation to call.

14

15   15.   The model as set forth in claim 13 each of said method nodes further comprises:

16   invocations for a specific operation of the method node.

17

18   16.   The model as set forth in claim 13 each of said method nodes further comprises:

19   input data, including formatting and handling specifications.

20

21   17.   The model as set forth in claim 13 each of said method nodes further comprises:

22   output data, including formatting and handling specifications.

1   18.   The model as set forth in claim 13 each of said method nodes further comprises:

2   method-level exception handling rules.

3

4   19.   The model as set forth in claim 1 wherein said specification is a composition of

5   individual electronic services.

6

7   20.   The model as set forth in claim 1 applied in a distributed computer network

8   environment.

9

10   21.   The model as set forth in claim 1 wherein said process is a workflow.

11

12   22.   The model as set forth in claim 1 wherein said process is a composite electronic

13   service.

14

15   23.   A computer tool for compiling a specification of a process comprising:

16   computer code for representing a plurality of individual services as service nodes,

17   wherein each of said service nodes is representative of a respective service invocation

18   setup phase for each of the individual services; and

19   computer code for compiling a set of the service nodes into a composite service

20   forming a generically defined flow said process.

21

22

1   24.   The computer tool as set forth in claim 23 comprising:

2   said service nodes are expandable into method nodes, wherein method nodes are

3   representative of at least one respective operation inherent to a respective one of the

4   individual services which is expanded thereto.

5

6   25.   The computer tool as set forth in claim 24 comprising:

7   said method nodes represent a plurality of inherent executable operations

8   associated with a respectively associated one of the individual services.

9

10   26.   The computer tool as set forth in claim 23 comprising:

11   each said service nodes provides executable functions related to setting up

12   communication with each of said individual services.

13

14   27.   The computer tool as set forth in claim 23 comprising:

15   the composite service is a service node flow specifying generic functionalities

16   common to said process.

17

18   28.   A computer tool for compiling a specification of a process and executing the

19   specification of the process comprising:

20   computer code for representing a plurality of individual services as service nodes,

21   wherein each of said service nodes is representative of a respective service invocation

22   setup phase for each of the individual services;

1   computer code for compiling a set of the service nodes into a composite service

2   forming a generically defined flow of said process;

3   computer code for executing the specification of the process represented by the

4   generically defined flow by expanding each node of said set of the service nodes into

5   method nodes, invoking functionalities of the individual services thereby, wherein each of

6   said method nodes represent a plurality of inherent executable operations associated with

7   a respectively associated one of the individual services.

8

9   29.   A method for structuring individual electronic services registered on an electronic

10   service platform, the method comprising:

11   providing a top level having service nodes representative of extracted common

12   elements of the composite service;

13   providing a subsidiary level, wherein said service nodes are expanded into method

14   nodes for execution of specific operations inherent to a respective electronic service

15   represented thereby; and

16   providing linking nodes in the top level for connecting said service nodes into a

17   process flow, wherein said flow forms a hierarchical specification having a sequential

18   series of said individual electronic services.

19

20   30.   The method as set forth in claim 29 further comprising:

21   providing event nodes.

22

1   31.   The method as set forth in claim 30 in an internet environment.

2

3   32.   The method as set forth in claim 31 further comprising:

4   executing a process for providing electronic services over the internet environment

5   by executing the hierarchical specification.

6

7   33.   A method of executing a given composite process, defined as including a plurality

8   of individual electronic services registered on an electronic services platform, the method

9   comprising:

10   segregating generic electronic services common to the given composite process

11   from operations respectively inherent to each of said generic electronic services;

12   compiling a composite process flow using said generic electronic services; and

13   invoking each operations functionalities of each of said generic electronic services

14   by expansion of each of said generic electronic services into said operations only as

15   needed to continue said composite process.

16

17   34.   The method as set forth in claim 33, said compiling further comprising:

18   compiling a plurality of the individual electronic services as associated with a search

19   for data associated with said given composite process having at least one requirement

20   from each of said individual generic electronic services.

21

22

1   35.   The method as set forth in claim 33, said compiling further comprising:

2   compiling a composite process definition as a sequential series of service nodes,

3   wherein each said service node is a specification related to invoking communications with

4   a specific one of said service nodes.

5

6   36.   The method as set forth in claim 35 said executing further comprising:

7   including method nodes for each of said service nodes wherein said method nodes

8   are invocations of operations inherent with an associated one of the generic electronic

9   services.

10

11   37.   A computer tool for composing electronic service searching runtime criteria

12   comprising:

13   computer code for structuring a plurality of service nodes, wherein each of said

14   service nodes is representative of a generic service and includes only those criteria

15   essential to invoking said service;

16   computer code for invoking a plurality of method nodes, wherein a set of method

17   nodes is representative of operations inherent to an associated one of said service nodes;

18   and

19   computer code for linking nodes sequencing said service nodes into a coherent

20   flow representative of a composite service including more than one generic service.

21

22   38.   The tool as set forth in claim 37 comprising;

1   computer code for handing event nodes.